Washington State Department of Transportation

Third Quarter Report

July–September 2005

Hood Canal Bridge Retrofit and East Half Replacement Project

WEST-HALF RETROFIT COMPLETION: 2005
EAST-HALF REPLACEMENT COMPLETION GOAL: 2009

MOVING FORWARD

A major milestone was reached when the Hood Canal Bridge east and west approach spans were replaced during the August closures. During the closures, traffic moved smoothly, drivers traveled safely during both closures and the community was well prepared. Completing this milestone was an important step toward providing a stronger, wider and safer bridge that will last for decades. The project is moving forward to complete the next major milestone – replacing the east half of the bridge. The highlights from this quarter were:

Construction Progress
Construction progressed rapidly through the summer months. Approach spans were replaced, west-half roadway widening work was almost finished, east-half anchor cables were replaced and steel transition span and truss fabrication neared completion.

WSDOT and Kiewit-General neared the end of a negotiations process regarding future construction work.

Public Outreach and Partnerships
Public outreach efforts for the two August closures were completed. The operations planning committee put forth an extensive planning and preparation effort getting ready for the Hood Canal Bridge three-day closures. Preliminary evaluation and feedback show that both the public outreach efforts and mitigation planning were effective in helping the public prepare for the closures and find alternate routes.

Safety Update
Safety remained paramount for both WSDOT staff and the contractor. No recordable injuries were reported during this period.

Financial Report
Of the $292 million originally budgeted for the project, $179.6 million had been spent as of September 2005. The Hood Canal Bridge project budget will be updated and finalized once contract negotiations with Kiewit-General are completed.

Environmental Stewardship
Environmental stewardship remained a focus during project construction. No incidents occurred at the bridge. WSDOT continued to monitor environmental impacts associated with the project.

For more detailed information:

Crews work to secure precast end wall before new east approach span is moved into place.

CONSTRUCTION PROGRESS

The summer months brought intensive construction effort by WSDOT staff and Kiewit-General.

Project Site Completion Status

Percent Completed as of 9-30-05

East Approach 96%

West Approach 97%

West-half Roadway Widening 95%

Anchor Cable Replacement..... 100%

Transition Spans..... 15%

Source: WSDOT Hood Canal Bridge Project Office

APPROACH SPAN REPLACEMENT

WEST APPROACH SPAN REPLACEMENT

(8 p.m. August 11 - 10:20 p.m. August 13)

WSDOT's contractor, Kiewit-General of Poulsbo, started work to replace the 2.2 million pound, 190-foot-long west end approach span, at 8 p.m. August 11. The lack of problems with the bridge deck rolls helped move the weekend-long closure ahead of schedule. WSDOT used techniques – such as pre-cast walls and roadway sections – to accommodate a shorter closure. The old approach span was moved onto temporary falsework in just 2.5 hours on Thursday evening. The new west-half approach span was in place by 6 p.m. on Friday, about four hours ahead of schedule. The bridge reopened Saturday night, more than a day ahead of its Monday morning deadline.

West-half approach span work included:

- Pouring concrete for approach span road deck, traffic barriers and Pier 3 crossbeam
- Stripping wood forms from new approach span
- Working on roll-off falsework (temporary steel support structures)
- Preparing for and completing approach span roll
- Placing precast approach slabs after the roll was complete
- Installing drainage
- Grading embankment north and south of Pier 1
- Removing concrete deck and steel superstructure from old approach structure
- Removing roll-off falsework for Piers 1, 2 and 3
- Installing Pier 3 cat-walk

Crew working to complete west approach span retaining wall before new approach span is moved in place.

New west approach span is moving into place.

Crews install precast approach spans on the west side of the bridge.

Crane removes top of old pier to make room for new east approach span to roll into place.

The old east approach span is out of the way and the new east approach span is moving into place.

EAST APPROACH SPAN REPLACEMENT
(8 p.m. August 21 - 8:42 p.m. August 23)

Increased crew size helped the contractor, Kiewit-General of Poulsbo, move ahead on approach slab work at the same time as pier demolition and the new approach span roll. Coordinating the work in this manner helped move the closure ahead of schedule. The contractor also did not experience major problems rolling the new approach span – more than two football fields long – into place on Aug. 22. The replacement of the bridge's east-half 640-foot-long east-half approach span was completed more than a day ahead of the planned schedule.

East-half approach span work included:

- Pouring concrete for Piers 6, 7, 8 and 9 end diaphragms (concrete supports between the girders), Pier 10 south wing wall (retaining wall parallel to the bridge), Pier 5 and 10 expansion plates and traffic barriers
- Stripping wood forms from new approach spans
- Working on roll-off falsework (temporary steel support structures)
- Preparing for and completing approach span roll
- Installing drainage
- Grading embankment north and south of Pier 10
- Removing concrete deck from old approach structure
- Starting demolition work on old substructure (girders and piers)

Approach Span Replacement Process

Step 1	Disconnect phone and power lines to the existing approach span
Step 2	Cut the existing approach span road deck at both ends to disconnect it from the transition span and the asphalt
Step 3	Set up jacks under the existing approach span
Step 4	Jack the existing approach span up on to the rollers
Step 5	Roll the existing approach span on to the temporary falsework
Step 6	Demolish and remove roadway approach slabs
Step 7	Set pre-cast end wall or retaining wall at the end of the approach span
Step 8	Finish the end wall
Step 9	Remove the tops of existing piers
Step 10	Remove jacks from the existing approach span and place under new approach span
Step 11	Jack the new approach span up on to the rollers
Step 12	Roll the new approach span into place
Step 13	Install permanent bearing pads at each pier
Step 14	Remove all jacks from the new approach span
Step 15	Install new roadway approach slabs
Step 16	Install expansion joint
Step 17	Pave and stripe roadway
Step 18	Reconnect power and phone lines
Step 19	Open to traffic

West-half widening concrete poured in place and traffic barrier nearing completion.

WEST-HALF ROADWAY WIDENING (north side):

The bridge's west half is being widened to match the new east half (to be installed in 2009). Last year the contractor worked along the south side. This summer, Kiewit-General will finish widening the north half. Good progress was made in forming new deck sections and pouring concrete. In addition to widening the concrete road deck, Kiewit-General is widening the west half steel draw span. The estimated completion date for the road widening work is the first week of November. The final work includes removing the old traffic barrier, installing new traffic and barrier gates and re-striping the roadway.

West-half roadway widening work included:

- Placing all girders
- Setting new steel framing in place for lift (draw) span
- Tying epoxy-coated steel rebar in preparation for west-half widening deck pour
- Pouring concrete for road deck and traffic barrier
- Installing railing on top of the traffic barrier

STEEL TRANSITION SPANS AND TRUSSES (east and west)

Mississippi Tank Company finished welding all 116 diagonal pipes needed for the steel transition spans. Shipping approval has been given to 83 of the 116 pipes. MTC is now focusing on grinding and inspection (visual, radiography, ultrasonic, magnetic particle) operations for the remaining 33 pipe sections.

EAST-HALF ANCHOR CABLE REPLACEMENT

General Construction finished replacing 17 east-half anchor cables in July, ahead of schedule and under budget. Anchor cable placement was then checked via a remote operated vehicle (a submersible device with a camera mounted on it). WSDOT's traditional role in construction projects includes quality control and inspecting the contractor's work. In this case, since WSDOT inspectors do not own the equipment for deep sea driving, they reviewed the videotapes taken by the remote operated vehicle to ensure proper anchor cable placement.

EAST-HALF BRIDGE REPLACEMENT

WSDOT staff continued to pursue construction at existing facilities throughout the Puget Sound and negotiating contract changes with Kiewit-General.

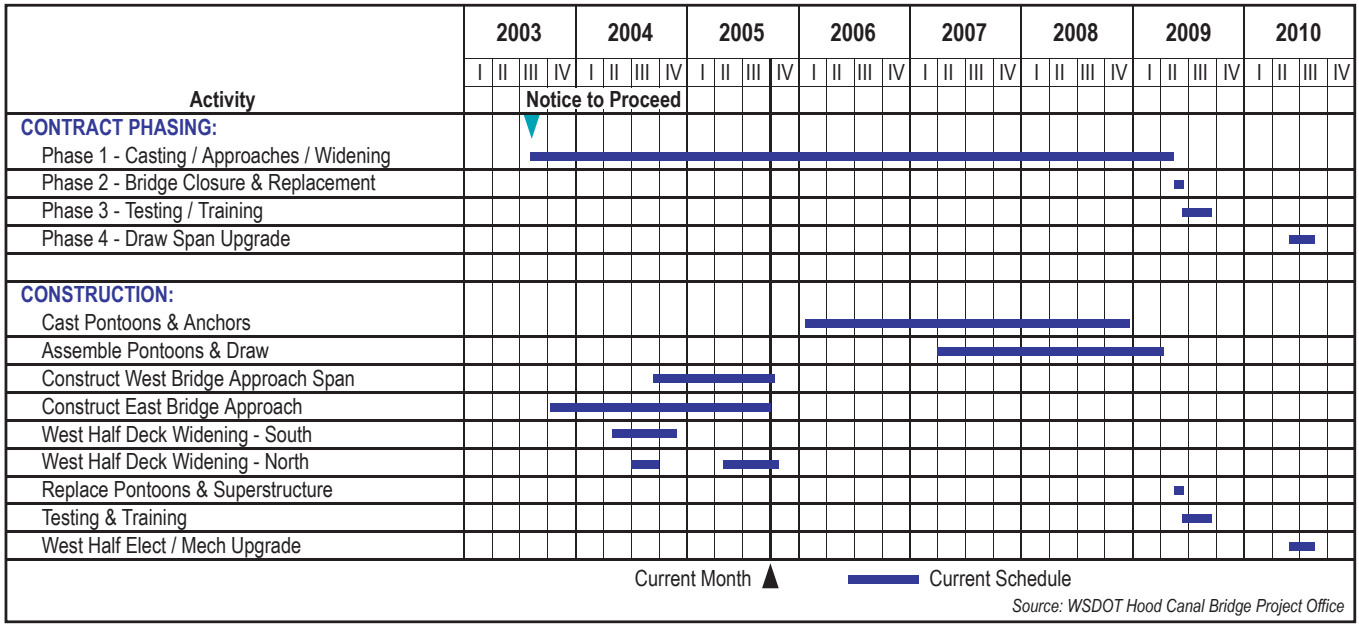
The next steps in the process include:

- Signing change order
- Obtaining permits
- Starting pontoon construction

The anchor placement is tentatively scheduled for Summer 2008 and the east-half pontoon replacement should follow one year later in May-June 2009. Final project completion is expected in 2010.

SCHEDULE UPDATE

Physical completion of the project is estimated at 33%.



Source: WSDOT Hood Canal Bridge Project Office

PUBLIC OUTREACH, PARTNERSHIPS AND CLOSURE REPORTING

August 2005 Closure Traffic Patterns

Vehicle traffic across the bridge slowed to just a trickle prior to each closure. Traffic on the detour routes flowed smoothly. More travelers took a ferry. Olympic Peninsula residents and tourists to the region were prepared for the closures and changed their travel patterns.

Where did the traffic go?

Deferred Trips

Seventy-five percent of the 15,000 to 20,000 average daily trips across the Hood Canal Bridge didn't make the trip at all during the closures, choosing instead to shop, to eat or to visit locally. Or the motorists simply chose to reschedule their trips until the bridge re-opened.

The number of 2005 deferred trips represents about three times more than are expected for the 2009 eight-week closure. The high percentage of deferred trips seems to be due to drivers' willingness to delay a trip, reschedule an appointment, take time off work or drive a different way because they only had to adjust their schedules for a few short days. Some options utilized to get around the bridge during the August closure will not be viable for drivers when faced with eight-week closure.

Used a detour

The remaining 25 percent of drivers that did not defer their trip accessed three main detour options: driving US 101, taking the Washington State Ferries (WSF) Port Townsend/Keystone ferry route, or riding the temporary passenger-only ferry service (POF) between Port Townsend and Seattle.

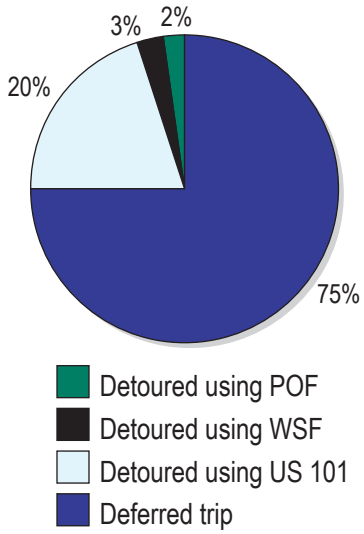
Driving US 101

The US 101 route represented 19 percent of closure travelers during the first closure (weekend) and 23 percent during the second closure (weekday). This data was gathered using nine traffic counters placed around the northeast Peninsula along the US 101 detour route during the closures. Some observations were gleaned from the US 101 traffic data.

1. Drivers left earlier than normal to accommodate longer trips along the US 101 detour route.
2. There was a 40 percent increase in traffic at US 101 in Quilcene during the weekday closure and 30 percent increase during the weekend closure as compared to typical August traffic.
3. More than half of the closure related traffic continued on US 101 instead of taking SR 106.
4. There was a 13 percent (weekday) to 17 percent (weekend) increase at the SR 3 and SR 106 intersection near Belfair. To the south of the intersection, there was a less than 10 percent increase over normal traffic volumes. Increases in traffic volume during the weekend closure tended to be in the mornings, while was no discernable difference in time of day during the weekday closure.

The numbers along this driving route may be substantially higher for the 2009 closure. The information gathered will help WSDOT better evaluate projected 2009 traffic patterns.

August 2005 Closure Traffic Patterns



TRIP	AVERAGE	WEEKDAY	WEEKEND
Ferries	5%	4%	5%
Detour US 101	20%	23%	19%
Deferred	75%	73%	76%

Taking A Ferry

The two ferry options represented less than 5 percent of normal bridge traffic. The Port Townsend/Keystone route showed the highest increase on WSF vessels with a 30 percent increase in weekend traffic and a 39 percent increase in weekday traffic over the closure period, amounting to an average of about 500 additional vehicles accommodated per day. This ferry run was very important in getting drivers to and from the peninsula and easing traffic on US 101 driving route.

Passenger-only ferry service was limited to infrequent runs connecting Port Townsend/Seattle and Port Ludlow/Kingston. We cannot draw conclusions about configuring the passenger-only ferry route for the 2009 closure based on the small numbers of riders on the Port Ludlow route. However, the ridership from Port Townsend/Seattle was close to the number forecasted for people wanting to travel to directly to Seattle.

SAFETY UPDATE

Safety remained paramount for both WSDOT staff and Kiewit-General (K-G). No lost workdays or restricted days were reported this quarter.

PERSONNEL SUMMARY

July - September 2005

	Hours Worked	Recordable Cases	LWD Cases	Lost Workdays	Restricted Cases	Restricted Days	Fatalities
K-G	34,528	0	0	0	0	0	0
WSDOT	4,070	0	0	0	0	0	0
Total	38,598	0	0	0	0	0	0

No recordable injuries were attributed to WSDOT or Kiewit-General for this quarter.

Project To Date

	Hours Worked	Recordable Cases	LWD Cases	Lost Workdays	Restricted Cases	Restricted Days	Fatalities
K-G	349,481	2	0	0	0	0	0
WSDOT	173,092	2	0	0	0	0	0
Total	522,573	4	0	0	0	0	0

The previous injuries attributed to WSDOT during the life of the project included:

- Employee attempted to open a hatch with T-handle wrench, could not get it open and injured their hand by striking it with the wrench. The employee was treated with first aid and had no lost time or work days. Employee was instructed on the proper equipment to use for this activity in order to work safely.
- While cutting brush with a machete, the individual cut himself with the machete and was treated with first aid; no time lost.

The two recordable cases of injury attributed to K-G are a hairline fracture of the wrist while operating a wrench and a hobo spider bite that became infected. Lost time information was not available for these two recordable cases.

VEHICLE SUMMARY

WSDOT Hood Canal Bridge Project Office Vehicles

	Hours Worked	Recordable Cases	LWD Cases	Lost Workdays	Restricted Cases	Restricted Days	Fatalities
2005 Y-T-D	44,481	0	0	0	0	0	0
Project To-Date	169,022	3	0	0	0	0	0

No recordable vehicle accidents were attributed to WSDOT or K-G for this quarter.

Project to date, the three recordable vehicle accidents were:

- In icy conditions, vehicle slid across oncoming traffic, ended up in ditch. No injuries.
- Vehicle was parked next to dump truck on site. The vehicle's door was open as the dump truck took off. Vehicle's door was ripped off. No injuries.
- WSDOT vehicle was stopped at a stoplight behind a semi trailer. Vehicle in next lane rolled forward and hit the front of the WSDOT truck. No injuries.

FINANCIAL REPORT

When the Hood Canal Bridge contract was awarded in June 2003, the project budget, which included the cost of building pontoons and anchors at the graving dock in Port Angeles, was $275 million. Since that time, budget adjustments were made as new needs arose – anchor cable replacement; inflation in cost of goods and services; and, archaeological efforts. Including these additional work items, the February 2005 project budget was $292 million. Of that $292 million, $179.6 million was spent as of September 2005.

Moving pontoon and anchor construction to different locations changes the costs associated with completing the job. Existing facilities around the Puget Sound offer the best production schedule and less risk than building a new graving dock, but necessitate a budget increase. Additional funds are needed to cover costs associated with stopping the work, re-pricing the contract to use other facilities, parts storage and escalation of costs for labor, equipment and materials. The full extent of the additional costs can not be quantified until negotiations with K-G were completed. To ensure enough funding for project completion and cover anticipated cost increases, $162 million was included in the 2005 Transportation Partnership Account.

FINANCIAL REPORT, continued

Project Cost Summary

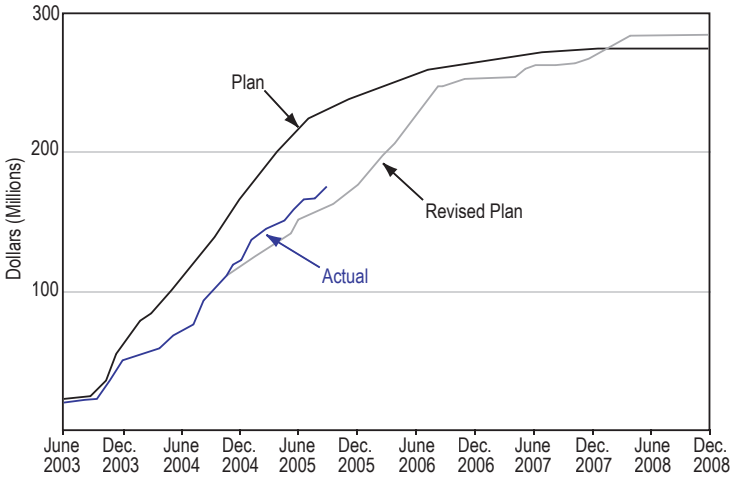
Expenditures as of September 2005 (in millions)

Project Cost Summary	Budgeted	Expended
Preliminary Engineering	$ 12.4	$ 12.4
Right-of-Way	7.7	7.0
Construction	271.9	160.2
Total	**$292.0**	**$179.6**

Source: WSDOT Hood Canal Bridge Project Office

Planned vs. Actual Expenditures

(Total Project Cost)



Source: WSDOT Hood Canal Bridge Project Office

Construction Costs

The construction costs for the project were budgeted to be $271.9 million. As of September, payments to the contractor total approximately $130.3 million (including sales tax). This includes payments for material on hand (~$26.5 million), change orders for business impacts related to the graving dock suspension (~$10 million), and change orders related to the work at the existing bridge site (~$800,000). The remaining construction budget covers contract management by WSDOT.

Outstanding Issues / Potential Impacts to Cost:

- Site location selection for anchors
- Negotiating future contractor costs at new site(s)

Contractor Payments vs Completion Status

Period Ending September 30, 2005

	Plan			Actual			
	Bid			Expenditures To Date		Phys % Complete	
Item	Amount	%	% of Phys Work	Amount	%	Item	Project
Mobilization	**19,900,000**	**9.8%**	**0.2%**	**19,830,000**	**99.6%**	**100.0%**	**0.2%**
Graving Dock Construction	**29,900,000**	**14.7%**	**18.0%**	**28,500,000**	**95.3%**	**28.9%**	**5.2%**
Casting	**53,400,000**	**26.2%**	**28.0%**	**300,000**	**0.6%**	**0.3%**	**0.1%**
Pontoon Casting	44,300,000	21.7%	15.0%	300,000	0.7%	0.5%	0.1%
Anchor Casting	9,100,000	2.4%	13.0%	—	0.0%	0.0%	0.0%
Pontoon Assembly / Superstructure	**33,400,000**	**16.4%**	**19.0%**	**—**	**0.0%**	**0.0%**	**0.0%**
Pontoon & Drawspan Assembly & Electrical	20,100,000	9.9%	8.0%	—	0.0%	0.0%	0.0%
Pontoon Superstructure & RST	13,300,000	6.5%	11.0%	—	0.0%	0.0%	0.0%
Approaches / Widening	**29,100,000**	**14.3%**	**28.5%**	**26,500,000**	**91.1%**	**65.1%**	**27.4%**
East Approach	18,000,000	8.8%	15.0%	16,800,000	93.3%	70.0%	14.4%
West Approach	3,900,000	1.9%	7.0%	3,700,000	94.9%	50.0%	6.8%
West Widening	7,200,000	3.5%	6.5%	6,000,000	66.8%	70.0%	6.2%
Pontoon / Truss Replacement	**32,200,000**	**15.8%**	**4.0%**	**2,170,000**	**6.7%**	**0.0%**	**0.0%**
Anchor Installation	3,500,000	1.7%	2.0%	—	0.0%	0.0%	0.0%
Replace Bridge - Truss	22,200,000	10.9%	0.0%	570,000	2.6%	0.0%	0.0%
Replace Bridge - Remove & Replace	6,500,000	3.2%	2.0%	1,160,000	24.6%	0.0%	0.0%
Phase 3 & 4 - Mech / Elect Work	**6,100,000**	**3.0%**	**2.3%**	**—**	**0.0%**	**0.0%**	**0.0%**
Testing & Training - East Bridge	300,000	0.1%	0.3%	—	0.0%	0.0%	0.0%
Mech & Elect - West Bridge	5,800,000	2.8%	2.0%	—	0.0%	0.0%	0.0%
Total Original Contract	**204,000,000**	**100.0%**	**100.0%**	**77,300,000**	**37.9%**	**n/a**	**32.9%**
MOH - Materials on Hand				**26,500,000**			
Change Orders (Adjusted for Overruns)	**18,000,000**			**16,000,000**			
Sales Tax	**18,426,000**			**10,540,000**			
Total Project	**240,426,000**			**130,340,000**	**54.2%**	**n/a**	**n/a**

Notes: 1. Differences between actual earnings % and item % is primarily due to material (MOH) payments and prep work; 2. Contract durations in workdays: Ph 1 = 595, Ph 2 = 30, Ph 3 = 40, Ph 4 = 70 Total = 735; 3. Planned physical % of work is based on total workday durations of each area as provided in the contractor's current schedule and then adjusted; 4. Actual physical % of work is based on estimated work performed; 5. Bid amounts for mob, drawspan and fab truss include large non-work activities.

Source: WSDOT Hood Canal Bridge Project Office

ENVIRONMENTAL STEWARDSHIP

WSDOT continued to monitor environmental impacts associated with the Hood Canal Bridge Project.

- Battelle Environmental conducted quarterly eelgrass monitoring.
- Kiewit-General and WSDOT worked on the details for demolition of the existing piers after the roll-on of the new approach spans.

Crane removes girders from old west approach span.

First sections of old east approach span are removed.

LOOKING AHEAD: OCTOBER–DECEMBER 2005

Bridge Site

West-half roadway widening (north side):

- Complete railing on top of new traffic barrier
- Complete concrete finishing
- Place traffic and barrier gates
- Remove temporary traffic barrier
- Add striping on roadway

West-half approach span work:

- Complete Pier 1 embankment
- Complete drainage
- Place permanent striping
- Place concrete for barrier on the precast approach slabs
- Install new guardrail
- Remove north trestle
- Place storm gate
- Complete electrical work

East-half approach span work:

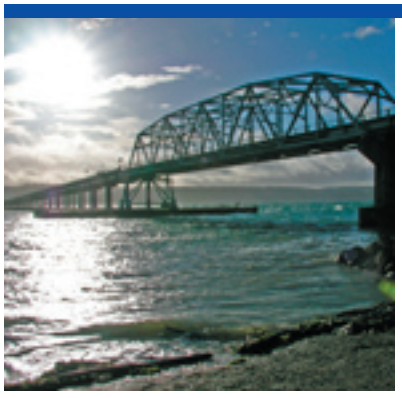
- Complete Pier 10 embankment and final approach grading
- Complete drainage
- Install last two precast approach panels
- Pave approach
- Place permanent striping
- Place concrete for barrier on the precast approach slabs
- Install new guardrail/concrete barrier
- Complete conduit runs for storm gates and advanced warning signs
- Place storm gates
- Complete electrical work on east approach
- Continue with substructure removal

Graving Dock Site

- Finish site selection process
- Complete contract changes with Kiewit-General

Public Information

- Hold community presentations as requested
- Complete three-day closure summary report
- Begin work with PRTPO for eight-week closure mitigation plan
- Produce project budget summary report
- Complete 2006 communication plan



This report highlights updated information regarding the Hood Canal Bridge Project work July-September 2005. Additional information may be obtained from WSDOT's Olympic Region Communications Office at (360) 357-2789.

For more information about the Hood Canal Bridge Project, visit the HCB web site: **www.hoodcanalbridge.com.**

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